

Fig. 3

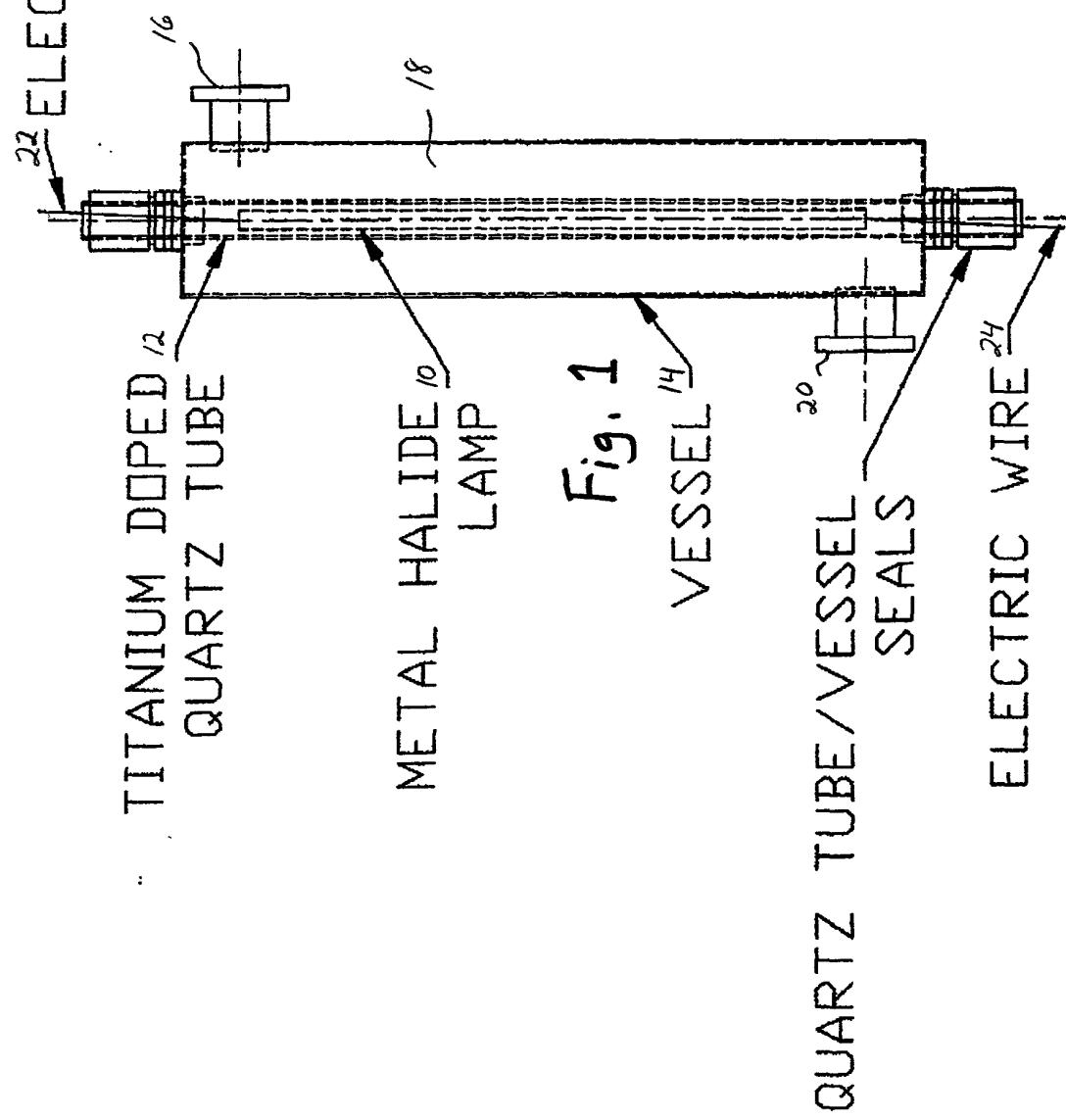
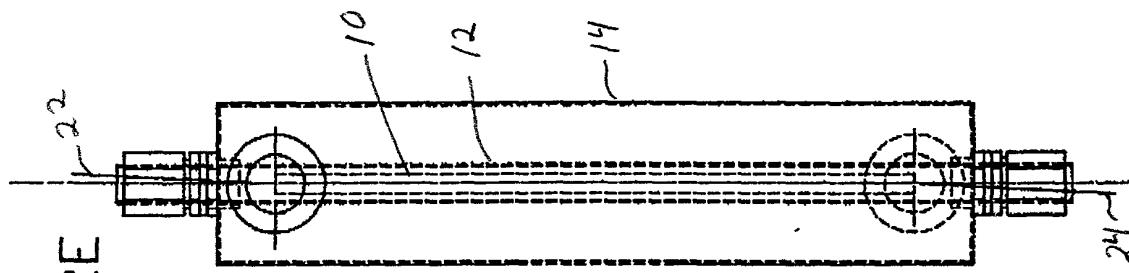


Fig. 2



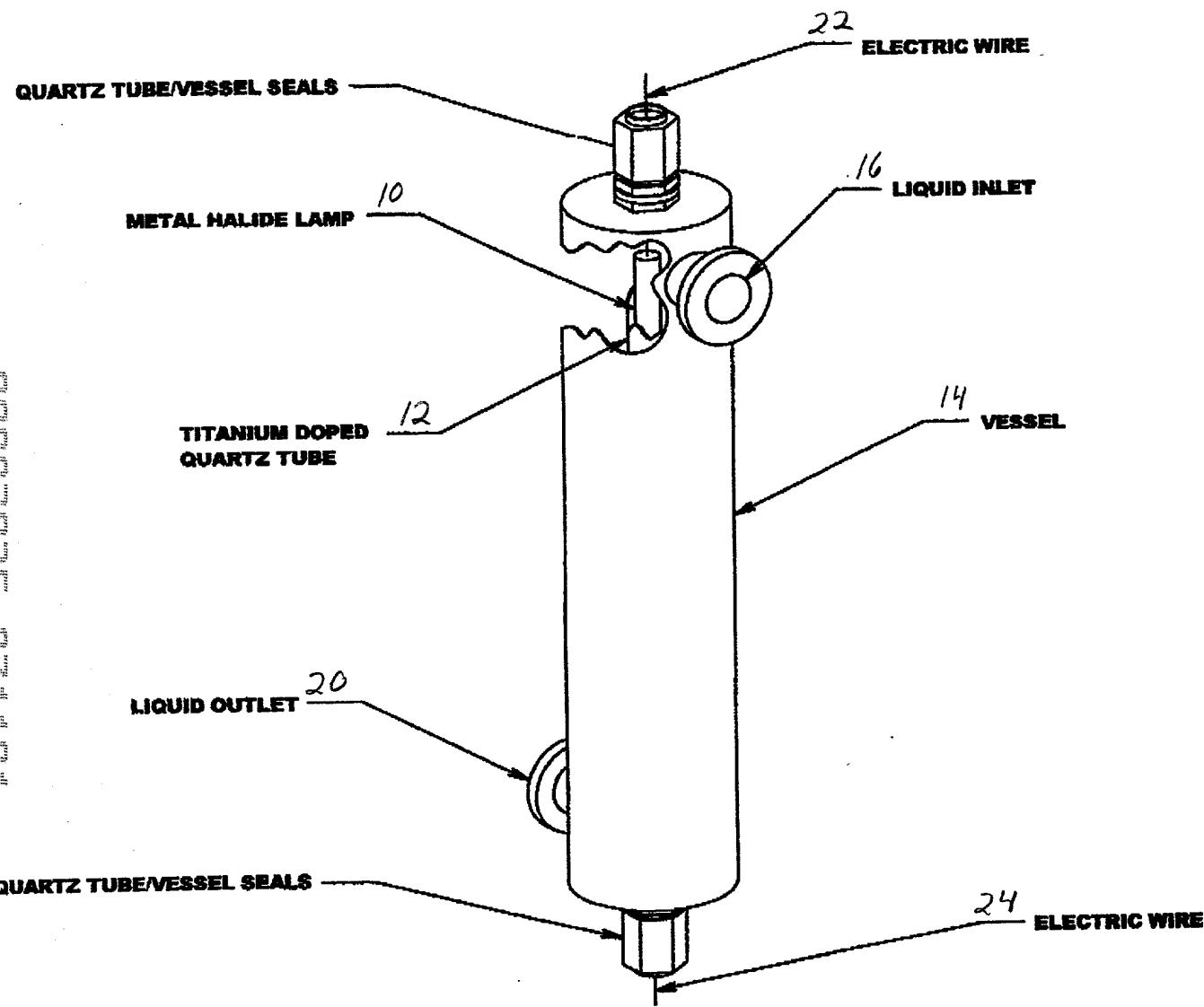


Fig. 4

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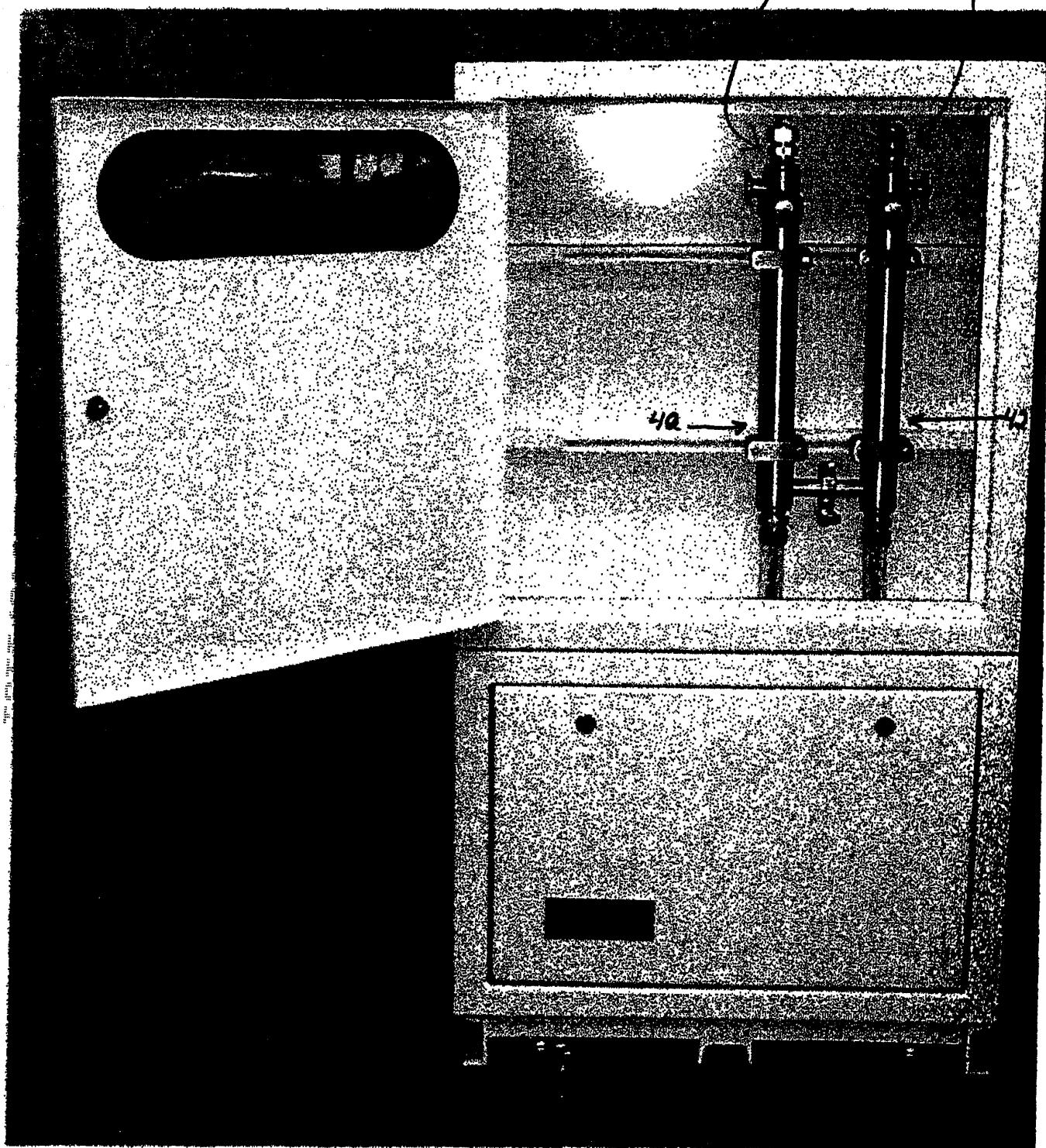
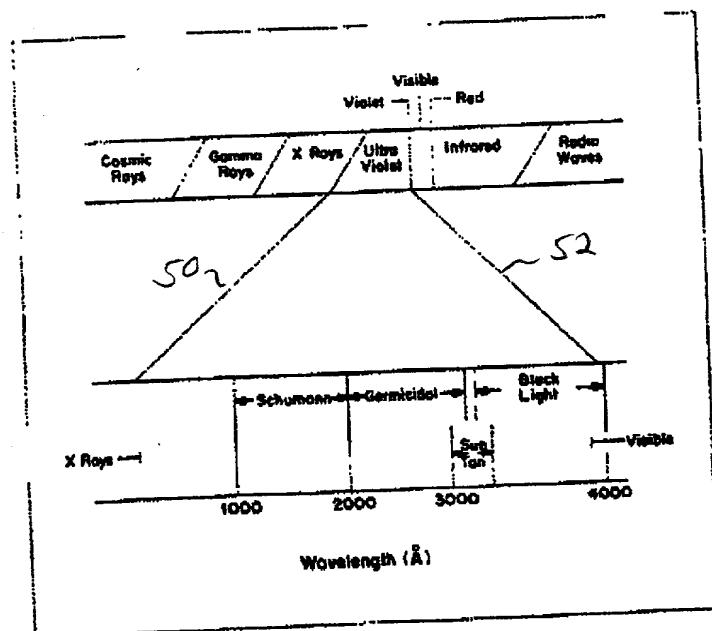
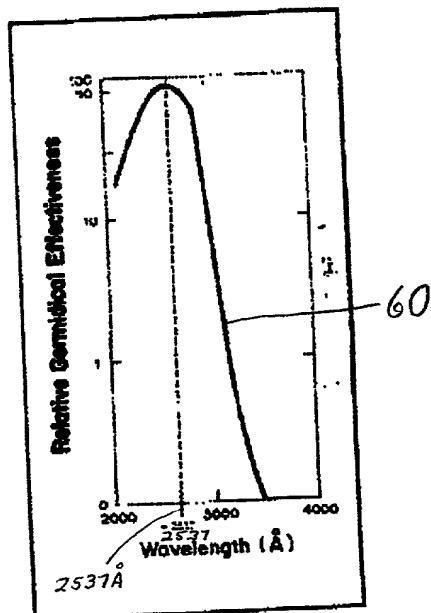


FIG. 5



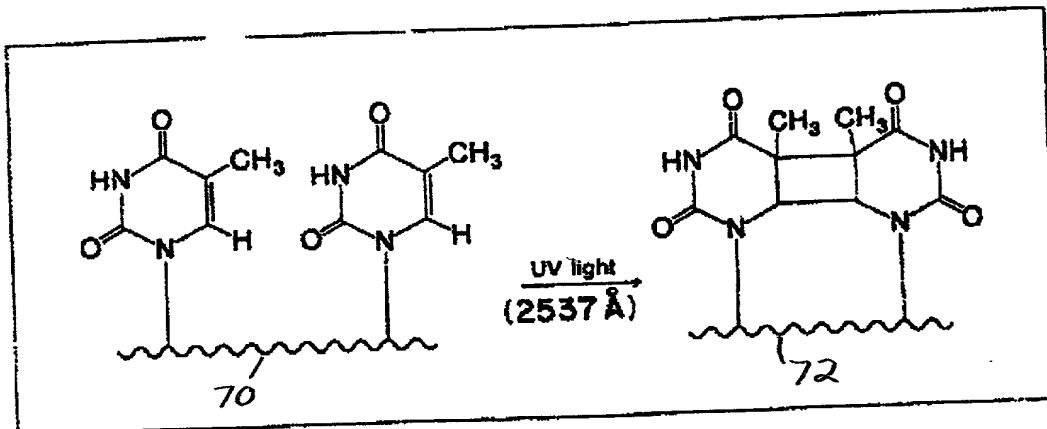
Electromagnetic spectrum (enlargement of ultraviolet region).

FIG. 6



Bacterial effectiveness curve showing the relative effectiveness of various wavelengths in killing bacteria.

FIG. 7



Ultraviolet light causes adjacent thymines (or cytosines) in DNA to dimerize. The rippled lines at the bottom of the structures represents the deoxyribose-phosphate backbone of the DNA strand.

FIG. 8

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Result of E-Coli Culture Tests on E-Coli 0157:H7

Culture Read on Cider 9/4/98 (Blood Agar Plates - 3 Dilutions)

	Cider SIAD Treated 1	Cider SIAD Treated 2	Cider Control E. coli-Not Treated	Cider Cont. No E. Coli
.5cc	No Growth	No Growth	Confluent Growth	No Growth
.1cc	No Growth	No Growth	Some Confluent Growth >10,000 col/ml E.Coli	No Growth
.001cc	No Growth	No Growth	75,000 col/ml E. Coli	No Growth

FIG. 9

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5 GAL TROPICANA GROVE AND 7 OZS OF PUP CRAYTE 100% JUICE

TUBE	TIME	TEMP1	TEMP2	TEMP3	TEMP4	LAMP1	LAMP2	ECOL1	ECOL2
1	0	236	3068.00	10	80	86	21	24	58
2	10	236	3115.20	10	80	86	21	25	50
3	20	236	3115.20	10	84	87	23	25	50
4	30	300	13.2	236	3115.20	10	84	23	25
5	40	300	300	13.2	236	3115.20	10	85	88
6	4.5	300	300	13.2	236	3115.20	10	85	88
7	5	300	300	13.2	236	3115.20	10	87	90
8	32	5	300	300	13.2	236	3115.20	10	87
9	33	5.5	300	300	13.2	236	3115.20	10	90
10	34	6	300	300	13.2	236	3115.20	10	90
11	35	6.5	300	300	13.2	236	3115.20	10	92
12	36	7	300	300	13.2	236	3115.20	10	90
13	37	7.5	300	300	13.2	236	3115.20	10	90
14	38	8	300	300	13.1	237	3104.70	10	90
15	39	10	300	300	13.2	236	3115.20	10	100
16	40	12.5	305	305	13.2	236	3115.20	10	110

NOTE: SUGAR CONTENT REMAINED CONSTANT IN ALL TRIALS
 TEMP1=LAMP1
 TEMP2=LAMP2
 TEMP3=JUICE IN
 TUBE1=(IN)OUTSIDE
 TUBE2=(OUT)OUTSIDE

LAMP1(W)=LAMP1
 ECOL1 100% =10 LOG
 TEMP3=JUICE OUT
 TEMP4=JUICE OUT

F16.10

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TEST ON E-COLI (ATCC11229) INOCULATED ORANGE JUICE

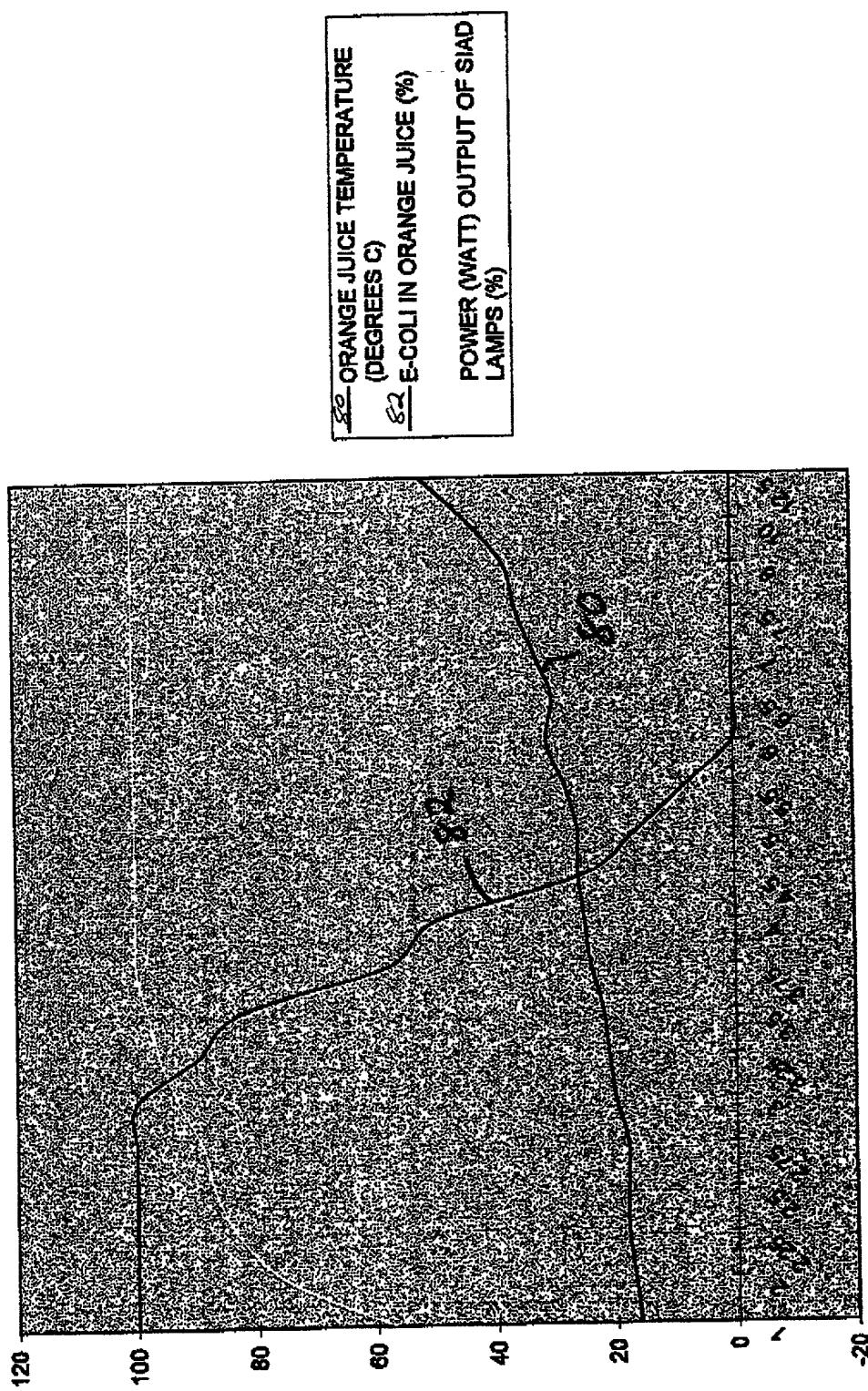


FIG. 11

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5 GAL. TROPICANA GROVESTAND "LOTS OF PULP" ORANGE JUICE INOCULATED WITH E-COLI ATCC 25922

TRIAL	TIME(MIN)	TEMP1(F)	TEMP2(F)	PRIM. I	PRIM. E	LAMP(W)	GPM	TUBE1(F)	TUBE2(F)	TEMP3(C)	TEMP4(C)	ECOLI(%)
1	1	175	175	8.5	236	2006.00	10	70	70	16	16	100
2	2	225	225	10.8	236	2548.80	10	70	70	16	17	100
3	2.25	235	235	11	236	2596.00	10	70	72	17	18	100
4	2.5	240	240	11.5	236	2714.00	10	72	74	17	18	100
5	2.75	245	245	11.5	235	2702.50	10	73	75	18	18	100
6	3	250	250	11.8	235	2773.00	10	75	78	18	20	100
7	3.25	260	260	11.8	235	2773.00	10	75	78	20	22	92
8	3.5	270	270	12.5	235	2937.50	10	76	80	21	22	83
9	3.75	280	280	13.3	235	3125.50	10	78	82	21	24	58
10	4	300	300	13.3	235	3125.50	10	80	85	23	25	50
11	4.5	300	300	13.3	235	3125.50	10	82	88	23	28	50
12	5	300	300	13.3	235	3125.50	10	85	90	25	28	50
13	5.5	300	300	13.3	235	3125.50	10	87	92	28	28	41
14	6	300	300	13.3	235	3125.50	10	88	93	26	30	41
15	6.5	300	300	13.3	236	3138.80	10	92	95	28	30	25
16	7	300	300	13.3	235	3125.50	10	95	100	30	33	8
17	7.5	300	300	13.3	235	3125.50	10	100	105	32	36	0
18	8	300	300	13.3	235	3125.50	10	100	105	34	37	0
19	10	300	300	13.3	235	3125.50	10	100	105	38	42	0
20	12.5	305	305	13.3	235	3125.50	10	110	112	43	51	0

NOTE: SUGAR CONTENT REMAINED CONSTANT IN ALL TRIALS

TEMP1=LAMP1

TEMP2=LAMP2

TUBE1=(IN)OUTSIDE

TUBE2=(OUT)OUTSIDE

TEMP3=JUICE IN
TEMP4=JUICE OUT

LAMP(W)=LAMP1
ECOLI 100% = 10 LOG

F16.12

TEST ON E-COLI (ATCC 25922) INOCULATED ORANGE JUICE

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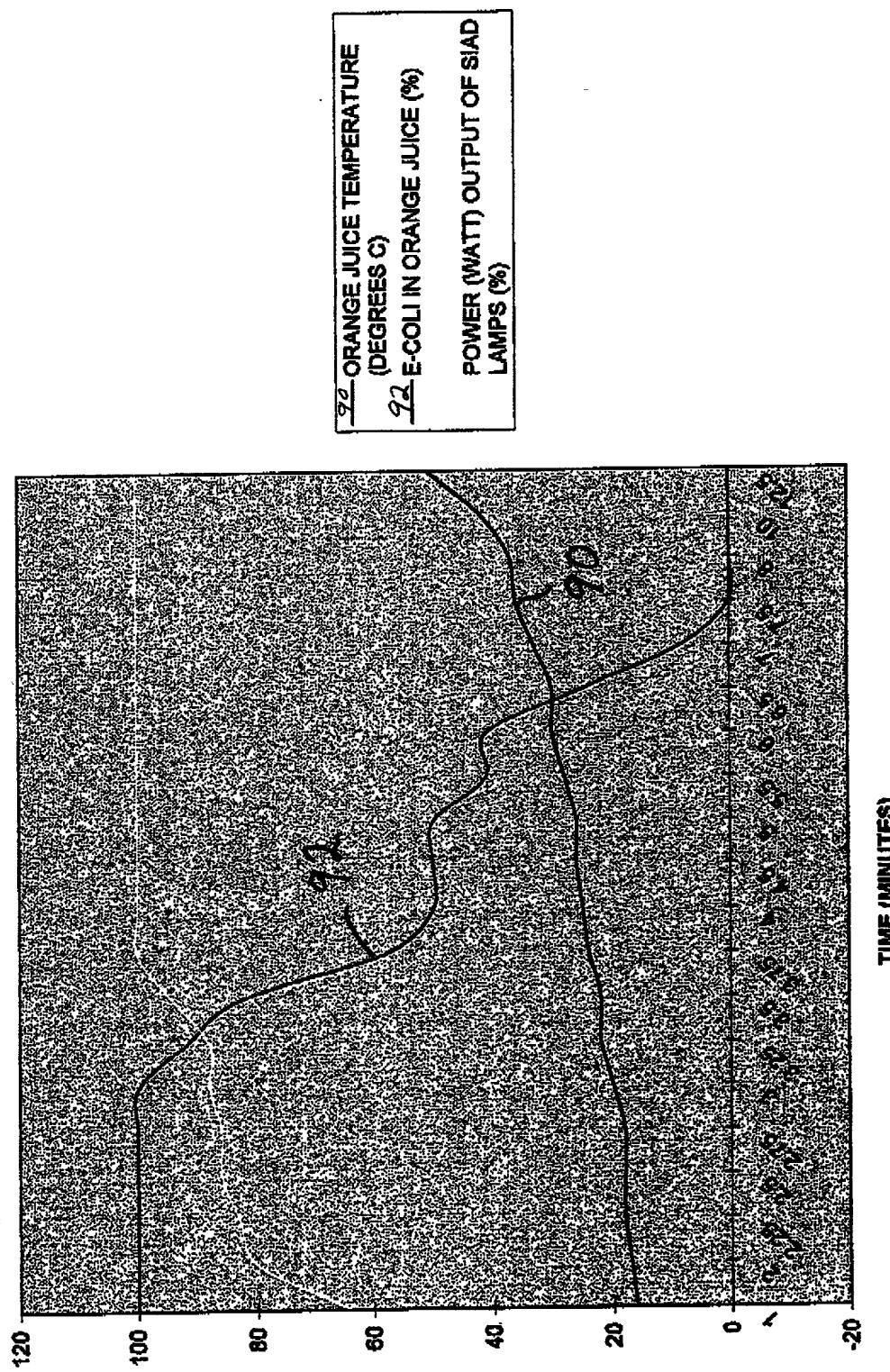


FIG. 13